**PATENT** 

Attorney Docket No.: A-66828-1/RMS/DCF



### IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

CHEE et al.

Serial No. 09/189,543

Filed: November 10, 1998

For: DECODING OF ARRAY SENSORS WITH MICROSPHERES

Plunkth

**CERTIFICATE OF MAILING** 

I hereby certify that this correspondence, including listed enclosures, is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, DC 20231 on:

Dated:

Signed:(

Christine P. Peters

## INFORMATION DISCLOSURE STATEMENT AND STATEMENT OF RELATEDNESS

Assistant Commissioner for Patents
Washington, DC 20231

Sir:

In satisfaction of the duty of disclosure under 37 C.F.R. § 1.56, and in accordance with the provisions of 37 C.F.R. §§ 1.97 and 1.98, Applicant wishes to draw the attention of the U.S. Patent and Trademark Office to the references cited on the accompanying form PTO-1449. Copies of the references are enclosed.

Serial No.: 09/189,543 Filed: November 10, 1998

With respect to patent applications, the applicants point out their duty under M.P.E.P. §2001.06(b) to disclose relevant patent applications of which they are aware. To this end, the applicants draw the Examiner's attention to the following patent applications;

- 1. U.S.S.N. 09/344,526, filed June 24, 1999 entitled "Decoding of Array Sensors with Microspheres," which claims priority to the instant application and U.S.S.N. 60/090, 473, filed June 24, 1998 entitled "Encoding and Decoding Fiber Optic Sensors with Microspheres."
- 2. U.S.S.N. 09/287,573, filed April 6, 1999 entitled "Self-Encoding Sensor with Microspheres," which is a continuation of 08/944, 850, filed October 6, 1997 entitled Self-Encoding Fiber Optic Senor."
- 3. U.S.S.N. 09/315,584, filed June 20, 1999 entitled "Encoding and Decoding of Array Sensors Utilizing Nanocrystals."
- 4. U.S.S.N. 09/256,943, filed February 24, 1999 entitled "Composite Array Utilizing Microspheres," which claims priority to U.S.S.N. 60/113,968 filed December 28, 1998.
- 5. U.S.S.N. 09/151,877, filed September 11, 1998, entitled "Target Analyte Sensors Utilizing Microspheres," Which is a divisional of U.S.S.N. 08/818,199, filed March 14, 1997, entitled "Fiber Optic Sensor with Encoded Microspheres."
- 6. U.S.S.N. 08/851,203, filed May 5, 1997, entitled "Fiber Optic Biosensor for Selectively Detecting Oligonucleotide Species in a Mixed Fluid Sample."

None of the foregoing references are believed to disclose the invention as claimed.

Nothing herein shall constitute an admission concerning the contents of any of the cited

Serial No.: 09/189.543 Filed: November 10, 1998



### RECEIVED

DEC 29 2000

#### **TECH CENTER 1600/2900**

references, nor shall the inclusion of a reference herein be considered an admission that the reference constitutes prior art against the invention claimed in the above-identified application. Submission of the present document shall not be construed as an admission that a search has been made or that better art does not exist.

The Commissioner is authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 06-1300 (Our Order No. A-66828-1/RMS/DCF).

Respectfully submitted,

FLEHR, HOHBACH, TEST, **ALBRITTON & HERBERT** 

David C. Foster Reg. No. 44,685

Four Embarcadero Center **Suite 3400** 

San Francisco, CA 94111-4187 Telephone: (415) 781-1989

Dated: Juny 19, 2000

1037715

Priority date 6/24/98

# BIG ILLUMINA IDS REFS. (as of 12/1/00) these do not apply to 68851, 68717, or 68396 family of cases)

	ulese do	not apply to occur, oct 17, or occur anning	
US PATENT	<u>27</u>	·	ok by DCF 1 no fee
4,200,110	4/1980	Peterson et al.	of by UCI
<b>4,499,052</b>	2/1985	Fulwyler	FXUI
<b>-</b> 4,682,895	7/1987	Costello	
4,785,814	11/1988	Kane	no tee
<b>√</b> 4,822,746	4/1989	Walt	110 100
<b>-</b> 4,824,789	4/1989	Yafuso et al.	
-4,999,306	3/1991	Yafuso et al.	
<b>\</b> 5,002,867	3/1991	Macevicz	
<b>√</b> 5,028,545	7/1991	Soini	
<b>√</b> 5,105,305	4/1992	Betzig et al.	
5,114,864	5/1992	Walt	
<b>√5</b> ,132,242	7/1992	Cheung	
<b>5</b> ,143,853	9/1992	Walt	
<b>√5</b> ,194,300	3/1993	Cheung	
<b>√</b> 5,244,636	9/1993	Walt et al.	
<b>5</b> ,244,813	9/1993	Walt et al.	
<b>5,250,264</b>	10/1993	Walt et al.	
<b>5,</b> 252,494	10/1993	Walt	
£,254,477	10/1993	Walt	
<i>√</i> 5,298,741	3/1994	Walt et al.	
<b>-</b> 5,302,509	4/1994	Cheeseman	
320,814جي	6/1994	Walt et al.	
<b>—</b> 5,357,590	10/1994	Auracher	
\$,380,489	1/1995	Sutton et al.	
-5,435,724	7/1995	Goodman et al.	
<b>-</b> 5,481,629	1/1996	Tabuchi	
<b>√5,</b> 494,798	2/1996	Gerdt et al.	
<b>~5</b> ,496,997	3/1996	Pope	
<b>5</b> ,512,490	4/1996	Walt et al.	
<b>√5</b> ,516,635	5/1996	Ekins et al.	
<b>√</b> 5,565,324	10/1996	Still et al.	
<b>√</b> 8,573,909	11/1996	Singer et al.	
<b>-</b> 5,575,849	11/1996	Honda et al.	
<b>√</b> 5,633,972	5/1997	Walt et al.	
<b>√</b> 5,639,603	6/1997	Dower et al.	
<b>-</b> 5,656,241	8/1997	Seifert et al.	
<b>5</b> ,690,894	11/1997	Pinkel et al.	
5,814,524	10/1998	Walt	
<b>5,840,256</b>	11/1998	Demers et al.	
5,854,684	12/1998	Stabile et al.	
<i>√5</i> ,888,723	3/1999	Sutton et al.	

5,900,481	5/1999	Lough et al.	
<b>-</b> 6,023,540	2/2000	Walt et al.	
SN 08/851,20	03	Walt	1449
SN 08/944,8	50 (67207)	Walt	1449
SN 09/033,40	62 (67208)	Walt	1449
<u>FOREIGN P</u>	<u>ATENTS</u>		
<b>√</b> 9′478 319	4/1992	EP	
<b>2723 146</b>	7/1996	EP	
<b>₩</b> 392 546	10/1990	EP	
<b>√</b> 269 764	6/1988	EP	
<b>89</b> /11101	11/1989	PCT	
<b>93</b> 702360	2/1993	PCT	
<b>-</b> 96/03212	2/1996	PCT	
<b>&gt;</b> 97/14928	4/1997	PCT	
97/14028	4/1997	PCT	
<b>97</b> /40385	10/1997	PCT	
98/50782	11/1998	PCT	
<b>98</b> /40726	9/1998	PCT	
<b>9</b> 8/53093	11/1998	PCT	
<b>√9</b> 8/53300	11/1998	PCT	
<b>√9</b> 9/67414	12/1999	PCT	
99/18434	4/1999	PCT	
∩ <b>⊘</b> 99/60170	11/1999	PCT	
<b>—</b> 00/13004	3/2000	PCT	
<b>-</b> 00/16101	3/2000	PCT	
no 00/48000	9/2000	PCT	

#### <u>ARTICLES</u>

Abel et al., "Fiber-Optic Evanescent Wave Biosensor for the Detection of Oligonucleotides," Anal. Chem. 68:2905-2912 (1996).

Anonymous, "Microsphere Selection Guide," Bandg Laboratories, (Fisher, In) September 1998.

Anonymous, "Fluorescent Microspheres," Tech. Note 19, Bang Laboratories, (Fishers, In) February 1997.

Bangs, L.B., "Immunological Applications of Microspheres," The Latex Course, Bangs Laboratories (Carmel, IN) April 1996.

Barnard et al., "A Fibre-Optic Chemical Sensor with Discrete Sensing Sites," Nature,

- 353:338-340 (September 1991).
- Chen et al., "A Microsphere-Based Assay for Multiplexed Single Nucleotide Polymorphism Analysis Using Single Base Chain Extension," Genome Research, 10(4):549-557 (2000).
- Czarnik, "Illuminating the SNP Genomic Code," Modern Drug Discovery, 1(2): 49-55 (1998).
- Drmanac, R. et al., "Sequencing by Oligonucleotide Hybridization: A Promising Framework in Decoding of the Genome Program," The First International Conference on Electrophoresis, Supercomputing and the Human Genome, Proceeding os th April 10-13, 1990 Conference at Florida State University. Ed. C. Cantor and H. Lim.
- Drmanac, R. et al., "Prospects for a Miniaturized, Simplified and Frugal Human Genome Project," Scientia Yugoslavica, 16(1-2):97-107 (1990).
- Drmanac, R. et al., "Sequencing by Hybridization (SBH) with Oligonucleotide Probes as an Integral Approach for the Analysis of Complex Genomes," International Journal of Genome Research, 1(1):59-79 (1992).
- Drmanac, R. et al., "Sequencing by Hybridization," Automated DNA Sequencing and Analysis, ed. M. Adams, C. Fields and J. Venter. (1994).
- Ferguson et al., "A Fiber-Optic DNA Biosensor Microarray for the Analysis of Gene Expression," Nature Biotechnology, 14:1681-1684 (1996).
  - Fuh et al., "Single Fibre Optic Fluorescence pH Probe," Analyst, 112:1159-1163 (1987).
- Healey et al., "Improved Fiber-Optic Chemical Sensor for Penicillin," Anal. Chem. 67(24):4471-4476 (1995).
- Healey et al., "Development of a Penicillin Biosensor Using a Single Optical Imaging Fiber," SPIE Proc. 2388:568-573 (1995).
- Healey et al., "Fiberoptic DNA Sensor Array Capable of Detecting Point Mutations," Analytical Biochemistry, 251:270-279 (1997).
- Hirschfeld et al., "Laser-Fiber-Optic "Optrode" for Real Time In Vivo Blood Carbon Dioxide Level Monitoring," Journal of Lightwave Technology, LT-5(7):1027-1033 (1987).
- [10] Iannone et al., "Multiplexed Single Nucleotide Polymorphism Genotyping by Oligonucleotide Ligation and Flow Cytometry," Cytometry, 39:131-140 (2000).

- Machael et al., "Making Sensors out of Disarray: Optical Sensor Microarrays," Proc. SPIL 3276, 34 1 (1998)
- Michael et al., "Randonly Ordered Addressable High-Density Optical Sensor Arrays," Anal. Chem. 70(7): 1242-1248 (April 1998).
- —Michael et al., "Fabrication of Iv. to- an Nanostructures Uning Optical Imaging Fibers and there Use as Chemical Sensor," Proc. 3rd Int. Symp., Microstructures and Microfabricated Systems, ed. P.J. Hesketh, et al., v. 17-5, Electroche Soc., 152-157 (Aug. 1997).
- Mignani, et al., "In-Vivo Biomedical Monitoring by Fiber-Optic Systems," Journal of Lightwave Technology, 13(7): 1396-1406 (1995).
  - Pantano et al., "Ordered Nanowell Arrays," Chem. Mater., 8(12): 2832-2835 (1996).
- Peterson et al., "Fiber-Optic Sensors for Biomedical Applications," Science, 13:123-127 (1984).
- Peterson, J. et al., "Fiber Optic pH Probe for Physiological Use," Anal. Chem., 52:864-869 (1980).
- Piunno et al., "Fiber-Optic DNA Sensor for Fluorometric Nucleic Acid Determination," Anal. Chem., 67:2635-2643 (1995).
- Pope, E. "Fiber Optic Chemical Microsensors Employing Optically Active Silica Microspehres," SPIE, 2388:245-256 (1995).
- Strachan et al., "A Rapid General Method for the Identification of PCR Products Using a Fibre-Optic Biosensor and its Application to the Detection of Listeria," Letters in Applied Microbiology, 21:5-9 (1995).
- Walt, D. "Fiber Optic Imaging Sensors," Accounts of Chemical Research, 31(5): 267-278 (1998).
- → Walt, "Fiber-Optic Sensors for Continuous Clinical Monitoring," Proc. IEEE, 80(6): 903-911 (1992).